

# Class 11



PHY 232  
Spring 2003  
Prof. S. Billinge

# Announcements

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# Concepts

1. Induction: changing the magnetic flux in a coil results in a voltage
  1. Magnitude of the induced voltage => Faraday's Law
  2. Direction of induced voltage => Lenz's law
2. Motional EMF: voltage induced on a conductor moving in a magnetic field
3. Generator



# Problem solving

- Find the **MAGNITUDE** of the induced EMF using an equation
- Find the direction of the induced EMF using Lenz's law



A circular loop of wire is located in a uniform and constant B-field. Which of the following are true...An EMF can be induced by:

1. Rotating the loop about an axis perpendicular to the plane of the loop
2. Rotating about an axis in the plane of the loop
3. Moving the coil along the field direction
4. Moving the coil perpendicular to the field direction

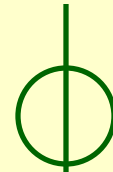
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You decide to steal electricity from the electric company inductively. You should:

1. Tape a coil flat against the mains line (and hire a lawyer)
2. Tape a coil perpendicular to the mains line (and hire a lawyer)
3. Wind a coil around the mains line (and hire a lawyer)
4. Forget it, pay your electric bill instead of the lawyer



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